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UNITED STATES INTELLIGENCE BOARD

COMMITTEE ON DOCUMENTATION

TASK TEAM VIII - PHOTO CHIP

Draft Report

Attached is the "cut-down" version of subject report as discussed by the Chairman CODIB at the CODIB meeting on 17 June 1966. This version does not reflect the questions and comments submitted by members, nor does it include the charts which are in the previous draft.

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[redacted]
Acting Secretary

U N I T E D S T A T E S I N T E L L I G E N C E B O A R D

COMMITTEE ON DOCUMENTATION

TASK TEAM VIII - PHOTO CHIP

T/VIII/R-1/1

16 June 1966

T/VIII/R-1/1

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For purposes of the chip inquiry and this report, references to the reconnaissance or recce community is considered to include generally activities and components concerned with acquisition, exploitation, processing and use of aerial reconnaissance materials to meet national, departmental and tactical needs.

I. INTRODUCTION

The Task Team* set out to examine evidence essential to formulating recommendations to CODIB/USIB for the most effective and efficient means of utilizing photo chips, as required, in the exploitation and processing of photographic information, primarily aerial, by all organizations within the purview of the USIB. This called for an examination of:

. existing and prospective chip systems;

. present and evolving requirements for these systems;

. the advantages and disadvantages of chip standardization for both the present and the future; and,

. the prospective value of chip automation made possible by standardization.

Within this broad goal, the following tasks were agreed upon:

a. to respond to the USIB/CODIB charge to investigate the feasibility of establishing a Photo Chip standard size for the aerial reconnaissance sector** of the

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*See Annex ___ for a list of team members.

**Considered to include generally those activities/areas concerned with acquisition, exploitation, processing and use of aerial reconnaissance materials to meet national, departmental, and tactical needs.

U.S. Intelligence Community, with particular reference to the possibility of adopting the recommended DoD tactical standard chip size of 70x100 mm external dimensions;*

b. to set the stage generally for programmed efforts in selected chip developmental areas to assure speedy, systematic progress toward a chip(s) and a chip system(s); and,

c. to identify selected problem areas.

In light of the task assignments, the Task Team agreed that:

. the inquiry should be conducted at sufficiently high classification levels to embrace the full chip problem;

. the inquiry should concentrate upon the aerial reconnaissance sector, but should include, as appropriate, consideration of the entire Intelligence Community; and,

. attention should be given to the information world outside the Intelligence Community from whence flows so much of the intelligence information essential to the full exploitation of reconnaissance materials.

This inquiry was accomplished initially by an examination of readily available evidence relevant to:

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*See Annex ___ for the USIB charge, the CODIB Terms of Reference, extracts from the SCIPS report (Vol. VI) on the ARC.

a. the existing and prospective requirements for chips and for chip standardization, as related to acquisition, exploitation, and use of aerial reconnaissance materials;

b. the technical and practical feasibility of a standard chip or of chip standardization;

c. the potential of a standard chip or of chip standardization on both the short and the long-term;

d. the relative cost, effectiveness, and efficiency of chips vs. roll film in general, with particular reference to:

(1) acquisition,

(2) reproduction,

(3) distribution,

(4) initial (Phase I) exploitation,

(5) exploitation, in depth,

(6) special purpose applications, such as exploitation for mapping, charting, geodetic, scientific and technical,

(7) data base storage, retrieval, manipulation and exchange both within an operating ARC component and among components of the ARC, and,

(8) general reference library uses.

e. the relative value, casting ahead 3-5-10 years, of chip standardization now versus following, until some indefinite future time, the present trend toward many sizes and many chip systems designed to meet the local, urgent, and specialized need of operating elements; and

f. the state-of-the-art of chipping, with particular reference to the critical points in the various technologies affecting the state-of-the-art, and probable developments therein affecting the relative feasibility, effectiveness and efficiency of chips vs. alternative forms, such as, roll film.

In order to expedite further study, the Task Team then:

. reviewed relevant literature of the field;

. drew upon the experience and current operating knowledge of the Task Team members;*

. supplemented the foregoing with selected briefings and on-site examination of chip systems, in operation, under test, and in advanced planning.

During this survey and analysis stage, the Team drafted some 35 working notes, accumulated and studied about 75 reference papers, and received about 14 briefings on existing

*The participating membership of the Task Team represents over 120 man-years of experience in various aspects of the aerial reconnaissance field.

and upcoming chip systems. The Team visited* the National Photographic Interpretation Center (NPIC); the Aerospace Chart and Information Center (ACIC); the Strategic Air Command (SAC); the Foreign Technology Division (FTD); the Rome Air Research and Development Center (RADC); the Defense Documentation Center (DDC); the U.S. Navy Reconnaissance Technical Support Center (NRTSC); the Navy Oceanographic Office; the National Library of Medicine; Documentation Inc.; the Army Map Service; and the Geodesy, Intelligence, Mapping Research and Development Agency. The Team also received 8 briefings from technical teams representing private business firms known to be active in those technological fields directly affecting chip potential.**

*The Team received, in lieu of a tour, a broadly need-to-know briefing on the NRO by [redacted] The briefing was followed by extensive discussion of various points directly related to chip standardization, such as, frame size, original record scale, resolution, accuity and contrast. 25X1

**See Annex ___ for a listing of the chip system inspections made and briefings received, and Annex ___ for a list of selected reference literature.

II. GENERAL FINDINGS AND CONCLUSIONS

A. General. It is clear that the problem of the photo chip, its standardization and its implied automation, has many facets, each of which warrants study in depth far greater than the Team was able to do. It is equally apparent that there are high dividends to be realized in the short term from chip standardization at this time even though such standardization is limited to selected use areas and to certain chip characteristics. Further delays in moving into chip standardization would probably only further complicate the difficulties involved in initiating standardization and in realizing the full potential of chip applications. In any event, chip standardization, regardless of the time of initiation, should in all probability be undertaken in stages. The task, then, is to devise a formula which will promote standardization in those areas now considered ready, and promote technical or administrative designed developmental initiatives to enlarge these areas. Required actions therefore include those having to do with the introduction of chip standards, and those having to do with extending the use of such standards once adopted.*

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*For purposes of examining the photo chip problem in its information processing system context, it is necessary to consider the requirement for three different chips, i.e., the operational data base chip, the analytical exploitation chip, and the general reference chip.

B. The Requirement for Chip Standardization. The fact that the reconnaissance community was built on roll film, supplemented by hand-made chips of various sizes and shapes, and that it currently operates analytically on these same materials raises the question as to where the requirement arises for chip standardization and the concomitant implication of the need to automate. During the course of this study (including, the exploitation, processing, using, and R&D facilities of the reconnaissance community) the Task Team at no point found a clamor for a standard chip, or chip standardization. Rather than refer to the existence of a manifest chip requirement, it is probably more accurate to refer to a chip potential value, as is suggested by the following factors:

1. the growing depth of reconnaissance and related information in file;

2. the increasing complexity of the original record mix as to size, scale, quality, etc.;

3. the anticipated increase in the primary reconnaissance materials to be exploited;

4. the rising need for collateral data and imagery to be used in exploiting reconnaissance materials, especially in relation to newly derived information;

5. probable developments in the use and dissemination of the reconnaissance materials;

6. the growing number of local chip systems being developed by operating components; and,

7. viewing the various reconnaissance operating components in terms of probable trends towards closer integration of exploitation and production systems.

In essence, more and more reconnaissance materials of a wider range of characteristics will be exploited in the foreseeable future for a greater number of uses. Under such circumstances, a standard chip takes on considerable interest as a primary medium of storage, retrieval and exchange, in addition to its potential role in general exploitation and in the PI analyst's personal, ultimate-quality file. It is not difficult to project a situation in which the Photo Interpretation file would be put under machine control for speed and flexibility. From here, it is but a short step to contemplate the advantages of using machines for storing, exchanging, creating, selecting, and merging chips of at least a standard size to provide real-time or near real-time support to the PI's, especially during round-the-clock work periods, and to provide a viable chip use and exchange system throughout the Intelligence Community.

C. The Chip -- Its Standardization and Automation. The hand-cut chip is an important element in the current way of doing business in the reconnaissance community. It should be replaced only by a device of demonstrated superiority. When standardization and automation are added to the term chip, the combination immediately raises a host of considerations, many of which are beyond the terms of reference of the present Task Team, such as:

1. the very structure and management of the reconnaissance community,

2. the operating relationships among the major recce components,

3. the wide variety of exploitation techniques used on recce materials,

4. the wide variety of uses made of recce material,

5. the technical quality of chips as quality relates to the sharply varying requirements of user groups, and,

6. the cost of chip handling equipment and related R&D lead-time.

In an action sense, the chip standardization problem breaks quite readily into the following three separate questions:

1. What chip characteristics can we standardize on now for what use areas?

2. What actions of a technological, administrative or environmental sort are necessary to reap the full potential of chip standardization as soon as possible?

3. What constraints operate upon the theoretical benefits of chip standardization?

D. The Chip Standardization Approach -- Risk and Promise. We are of two minds in regard to chip standardization. We are acutely aware of the inherent advantages of standardizing on such chip features as outside dimensions, quality, emphemeral data, control data, image size and location. We realize that successfully imposing even a partial chip standardization at this time could provide a quantum jump toward realizing the full chip potential. However, during our inquiry we also became keenly aware of the wide variation in the quality and size requirements of various components, particularly at the national exploitation level. Moreover there are forces at work both within the community and in the technologies themselves which materially affect the development of chip quality, chip automation, chip applications, and other information forms competitive with or complementary to chips. We also considered carefully the nature of standardization, and the

possible restrictive impact on future efficiency and effectiveness of too early, too full or too arbitrary a standardization of chips. From such considerations we came to the general conclusion that a standardization formula is needed at this point rather than a single standard for all aspects of a chip and for all users of chips. Within this, the first logical step should be to standardize on external dimensions for those components ready for such standardization, with extension of this standard to other activity areas and to other chip aspects as warranted by our chip experience, by the results of related R&D, and by advances in chip-related technologies.

E. The Standard Data Base Chip External Dimensions. We believe that a film chip with external dimensions of 70x100 mm is capable of doing a creditable job in response to many current data base requirements. We believe that standardization on this size will permit developmental efforts to proceed on semiautomatic or automatic chip-creating, handling and storing equipment systems. We further believe that this data base standard can also meet some of the comparative interpretation or analytical requirements at the national level, many of these requirements at the departmental level and virtually all such requirements at the tactical/operational level. We

are convinced that standardization on a 70x100 mm external size at this time is also supported by the prospective minimum 3-5 year yield from such standardization, and by the prospective residual utility of the chip and associated handling equipments even though this first standard may be eventually supplemented by other standard sizes. We have some question about how well the 70x100 mm chip can meet the varying needs of the numerous activities in the reconnaissance community, especially in the absence of operating performance and test records for this size chip. We also have some questions as to how long such a chip can continue to effectively support general departmental needs, particularly as to interfacing with collateral data systems and as to interfacing among the original records of the various oncoming technical acquisition sources. We are especially concerned about the 70x100 chip's being able to do the chipping job as more sophisticated equipment is developed for automatically chipping selected points/paths/ areas of the original roll film record and as progress is made toward a fuller exchange system within the Intelligence Community. In sum, the advantages standardizing upon the 70x100 chip even for limited purposes appear to clearly outweigh the disadvantages at this time of postponing attempts at standardizing.

The limited application of a standard 70x100 mm could be construed as providing excessive freedom to vary from this standard so long as the local chip system is designated as designed for other purposes, whether at the national, departmental or tactical level. Such is not intended. The intent is to provide for incremental standardization of a set of activities having widely varying chip needs and applications. Because many needs can be met with the 70x100 mm chip, which we may refer to as a "data base chip," we believe that few additional specialized exploitation chip systems will be needed to test the feasibility and effectiveness of the exploitation chip under development by the NPIC at a size of approximately 4x5 to 4x6 inches. (See section M below.) During this interim period, we believe that the institution of specialized local exploitation chip systems should be left to the discretion of local component management operating under the general USIB policy aimed at keeping the number of such new systems to a minimum pending completion of the exploitation chip R&D effort. All such new local systems should be registered with a single point within the community pursuant to the USIB approved interim exploitation chip policy statement.

F. Adoption of the Standard Data Base Chip. Application of this standard should be incremental. Generally, existing chip systems falling under the standard should convert as quickly as time, money or manpower permit, or as equipment is replaced. The deadline for converting existing chip systems to this standard should be 36 months from date of adoption. All new chip systems should adhere to the standard unless they qualify for exceptions as indicated in the next paragraph.

G. Exceptions to the Standard Data Base Chip. We believe that bona fide cases for exception to this standard exist now and that similar cases will probably arise in the future. The criteria for judging exceptions to the standard, and current operating examples, warrant mention here. Exceptions may be justified by the needs of operational, military, and interface activities where the operational effectiveness would be degraded by imposing standardization. In those cases where operational degradation is not controlling, the major elements to be considered are:

1. cost-effectiveness,
2. effectiveness of the component concerned, and
3. the degree and importance of the interface exchange.

In some cases, the constraints of weight and space will be clearly controlling. In other cases, the balance among the factors to be weighed will not be so clear. In these latter cases, we believe that the degree of interface and the importance of the exchange between the local, special-purpose chip system and other systems, both adjacent and distant, should be considered key factors. The Navy IOIS is a clear example of the exceptional situation where current operational, interface, and established design requirements, i.e., weight, space, operational effectiveness, etc., take precedence over other considerations.

H. Review Procedures for Exceptions. We believe that any exception to the standard chip should be carefully reviewed at the operating component level, at the departmental level, and require USIB approval.

I. The Standard Operational Data Base Chip; Internal Design Elements. The Team considers essential internal chip design elements to include: image size, image location, accession number, classification, information area, growth area, border, originator code, a copy number, and special dissemination restrictions. The work done to date by the Interservice Coordinating and Integrating Group (ISCIG) on the

above elements is basic,* requiring only the following additions at this time to achieve a viable data base/exchange chip system:

1. A two-letter originator code to be carried on each chip to identify the chip originating activity. (DIA has prepared such a set of codes and these should be adopted for the USIB standard chip. A separate two-letter originator code should be assigned each special projects chip-producing activity.)

2. A copy number so as not to be confused with the accession number.

3. As needed, special dissemination restrictions, these to be located within the human-readable-information area.

The resolution of difficulties connected with these and further details regarding internal chip elements, and the coordination of the decisions among the affected activities, should be undertaken by a special chip-implemention group, with representatives from activities concerned, established and charged on an interim basis.

J. The Standard Data Base Chip Image Quality. The Team studied the matter of chip image quality at considerable length. The ultimate quality needs exist at the national level for an

*See Annex __ containing paragraph 7 (e), ISCIG Special Chip Report, 15 June 1963 and ISCIG 5001-6, dated 13 January 1965 with enclosures, regarding chip accession number, and enclosure 2 of 1 October 1964, inclusive.

exploitation chip, with the tactical users being able to tolerate somewhat lower image quality, if necessary. Between these two lies the departmental data base/general exploitation area having varying quality requirements which can be met in large part by the 70x100 mm standard chip. The Team believes that, considering the present state of the art and the broadly diffused uses of recce materials, chip quality simply cannot be usefully standardized at this time. At the moment, the 70x100 mm chip, made with highest quality emulsions, can meet many of the departmental needs for general exploitation and virtually all the needs for general data base usage. For other less stringent needs, the local user should be allowed to balance out quality, special circumstances, general economics, and cost-effectiveness.

K. The Standard Data Base Chip Creation and Handling Equipments. The Team considers chip handling equipments to include at least those needed to store, retrieve, count, sort, manipulate, display and transmit physically over short distances. It should be stressed that the full potential of the chip can only be realized through a broad range of developmental activities embracing various technologies that relate to both chip quality characteristics and handling equipments. Many R&D actions are required to develop and procure the necessary

handling equipment. The DoD has established the Tactical Information Processing and Interpretation System Program Office (TIPI/SPO) as a combined Services effort and charged it with developing an effective mobile land-based tactical information processing system. In the course of developing this system, the TIPI/SPO must test and modify existing and prototype chip producing and handling equipments, and must have developed those additional pieces of equipment needed to satisfy the requirements of the TIPI/SPO system tactical users. The TIPI/SPO will gain highly valuable experience and knowledge. CODIB participation in the TIPI/SPO effort through a liaison officer or observer respresentative would assure the transfer of the TIPI/SPO experience to the broader problems of the Intelligence Community. Much time, work, and money may be saved in this manner. Unnecessary interposition of higher level considerations in the TIPI/SPO's development of the required tactical system should be avoided. The Team notes that we have to date no operating experience with the recommended data base standard. TIPI/SPO plans to use the recommended 70x100 mm standard provide an excellent opportunity to give a 6-month test of this recommended standard prior to its final adoption.

L. Chip Creating, Duplicating Equipment Problems Common to All Systems. There are a few types of equipments which apply to all chipping systems, particularly those related to national level exploitation and exchange, which require long-term R&D inputs, some equipment systems design and development, and some advanced technology. These include equipments, manual or computer driven, for high-quality chip creation from the original record, for duplication from a master negative or chip, for chip-by-chip-reproduction, for chip display dynamics, i.e., zooming, intensification, compression, and the like. These, and similar chip equipments requiring longer-term R&D, should be made the specific responsibility of an appropriate operating component.

M. The National Exploitation Chip Standard. This is a serious user problem area significantly different from the other use areas. We are convinced that, at the present state of the technological art, chip standardization in this area is neither feasible nor advisable at this time. It is not currently advisable largely due to the time and urgency attending exploitation activities, and not feasible due to the overriding requirement for ultimate image quality in real-time and the wide variation in image record size, scale, and content characteristics. Chip storage space in this user area is not

as controlling as for the data base and tactical chip user areas. Because of the wide latitude needed in each day's activities, superimposed upon the foregoing, a definitive solution is precluded at this time while rendering meaningful support to national foreign policy decisions and actions. Current evidence does not indicate conclusively that full and complete standardization of chips in this critical area will soon, if ever, be feasible and advisable. It would be most difficult, and indeed unwise, to regiment against the Photo interpreter's scissoring chips from available imagery to meet local needs not otherwise met to his satisfaction. However, even partial chip standardization at this level would probably pay dividends on both the short and the long haul. In light of the foregoing, NPIC should press forward with R&D effort for a national level standard exploitation/exchange stereo type chip, and be given necessary financial, technical, and manpower support for this effort. Other reconnaissance components need to be kept fully informed as to progress in this problem area and the probable outcome so as to assure the highest degree of readiness for any standardization flowing from the coordinated R&D effort.

N. The Tactical Applications of Standard Chips. The Team inquired into this specialized area at some length, viewing the tactical application of chips in three lights; i.e., first, as a consumer/user of imagery data base materials for reconnaissance and pre-attack operations; second, as a part of a more-or-less closed tactical intelligence acquisition and use cycle in the trans-attack phase where the intelligence cycle time can be less than one hour; and third, as an acquisition and processing system which passes selected critical information to theater commands and upward to Washington. The use of a previously prepared tactical data base consisting of imagery and data base chips is currently practical only prior to the onset of hostilities. The recommended operational data base standard chip would be useful generally in such a tactical data base, with the full understanding that variations must be permitted to meet special requirements arising from constraints of weight, space, and mobility. The maintenance of that data base by continual preparation of new chips and purging of old chips during a fluid period of active operations is not practical within the present state of the art and in many instances could actually impair operating effectiveness. Incremental maintenance and update, perhaps at some rear

echelon on a continual basis or on a limited basis aboard aircraft carriers as in the IOIS, is feasible and within the state of the equipment art. Under operational or tactical conditions, the acquisition/use turn-around can be less than one hour. Except in the case of the IOIS, eye-balling a roll film with a simple viewing table is the method used to date, and it may for some time be the only feasible way of dealing with conventional film inputs at the tactical level. In light of the foregoing, it is apparent that there is little opportunity for utilizing standard chips under operational conditions, except for advance data base preparation. Imposition of a chip standard upon tactical users prior to the outcome of the TIPI effort would not appear to be warranted. This leaves the third view, that of tactical and operational acquisition as a supplier of selected, critical material to theater and national headquarters. On occasion, rapid exploitation, processing and delivery of tactically acquired data on selected areas/activities/problems to the national level can be of critical importance. This feed-back to the national level can become of increasing importance to the field commanders of tactical acquisition and can become an increasing problem for the Tactical Forces. Evidence of this

is seen in the requirement for the IOIS carriers operating in Southeast Asia to generate as many as 50 copies of militarily important photos for distribution to other operating forces and to the national command. These circumstances suggest that this aspect be examined as an important part of chip standardization in the community.

O. Organizational Constraints on Standardization. During the course of the chip inquiry, it became apparent that the basic difficulty encountered in grappling with a community-wide problem such as photo chip standardization and automation, particularly with respect to minimized duplication and maximized exchange, was at least in part a reflection of operating conditions which constitute serious constraints on realizing the full benefits of efforts at standardizing. Early in the inquiry it became clear that the individual components, i.e., NPIC, elements of CIA and DIA, NRO, SAC, FTD, ACIC, however effective in their individual operations, are not subjected to the continuous review and management required for the successful implementation of standards in such a highly technical and fast changing field relationship between acquisition and exploitation is a case in point. Moreover, the exploitation stages of the technical source activities, even those for national level aerial reconnaissance photography

programs, are more disparately organized than are the acquisition stages. Serious as the present situation is, present trends in technical intelligence sources and related technologies will increase the difficulties of arriving at and implementing standards which but for organizational considerations would commend themselves.

P. Technical Constraints on Standardization. During the course of the chip inquiry, the Team became aware of several highly technical aspects that directly affect, sometimes in a controlling manner, both the extent of chip standardization that is presently feasible and the prospects for additional standardization. In each case positive guidance in terms of total needs, of selected technological developments in the relevant fields could substantially enhance the prospects for progress and reduce the achievement time. The need for such guidance is illustrated by the changing state of the art for chip making; the developing capability for digitizing imagery to permit storage on magnetic tape which permits computer manipulation, comparison, display and data transmission; and the prospect of reducing a large portion of the current distribution of expensive and bulky roll film through establishment of a system for timely distribution of selected, high-quality chips. For effective

results more effective means than presently exist are required for providing guidance in such areas as:

1. the development and extension of chip standards and the development and procurement of chip creating and handling equipment;

2. the monitoring of technologies affecting chip quality characteristics and, thereby, future chip applications; and,

3. the monitoring of emerging technologies broadly affecting the chip potential, such as alternative record forms, i.e., digital, micro-image, etc., the transmission of chipped and other images, and other aspects covered in Annexes E and F of this report dealing with the chip operating environment and technologies.

Q. Interface Problems Requiring Attention. The Team is concerned lest certain current and evolving chip and chip-related problems continue to grow in complexity and local commitment, especially in regard to aspects of an inter-agency or multiple file interface nature. The following are cited by way of illustration:

1. The interfacing of NPIC and DIA Minicard files with the DIA Filesearch System in such a way that effective exchange gradually replaces duplication.

2. The possible reformatting or transposing of imagery records, such as elements of National Intelligence Studies (NIS), Special Area Studies (SAS), Amphibious Objective Studies, including Coasts and Landing Beaches (AOS, C/LB), Uniform Photo Interpretation Reports (UPIR), Recognition Intelligence and Technical Keys, into those Microfiche data base, or other formats adopted for ARC and DoD customers. Such customers would include the Navy Intelligence Processing System (NIPS), or Tactical Intelligence Processing Installation (TIPI).

3. The developing of concepts for the use of Army MICROMAPS and the proposed NAVY Airborne DISPLAY SYSTEM, in the ARC, DoD and, in particular, in the TIPI and NIPS environment.

4. The improvement of and the assessment of the existing Tactical Target Illustration Mil D aperture cards produced under DoD cognizance by the Unified and Specified Commands.

5. The use of Airfields and Seaplane Stations of the World in Mil D aperture card or other chip-related size.

6. The proposed DIA uses of PI Reports as Minicard records and of Maps as Library records in Mil D aperture card form.

7. The technical consideration of the effective interfacing of Navy NIPS to DoD and to other ARC interfiles.

8. The selection, as possible candidates for exclusion from the data base chip standard, of those images for which standards may create more problems than benefits (such as briefing aids), or which may suffer under the state of the art (such as the PI chip as elsewhere described) or ACIC oversize map records (i.e., 40" x 60" charts on 4" x 6" or 4" x 5" chips).

9. The completion of the detailed survey* of photo chip systems and requirements related thereto, their operational applications and their characteristics as to:

a. chip size, quality, uses, storage, volumes and exchange volumes;

b. existing equipments, their strong points and weaknesses; and,

c. projected chip needs and R&D related to the development of concepts, systems, equipments and automation schemes responsive to anticipated needs.

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*See Annex ___ this report for the Chip Survey Questionnaire, which the Team prepared and submitted, in December 1965, to the Joint Imagery Interpretation Review Group with the recommendations that it be included as a part of their survey in gathering of data regarding the nature and operation of the national imagery interpretation effort.

R. The CODIB Chip Role. The general set of the recommended actions reflects the basic concept that primary responsibility for forward motion against the specified problems should be placed with the people and the organizations having operating and planning responsibilities most directly related to these problems. Such is the Team's intent. However, it has become quite clear during the inquiry that the photo chip will probably be a major handling medium in the information processing field for some time. Further, some of the Team's recommended actions open more doors than they close. The Team anticipates that much will be learned in the chip development program, and that much of this may be transferrable to broader information processing problems in the general intelligence community, and perhaps to other parts of the national executive support establishment. Therefore, the Team recommends that CODIB continue an active role in the unfolding chip effort, and that CODIB appoint a Chip Liaison Officer (Chip/LO) to monitor and to report on activities (both government and non-government) in this field, and, in general serve as a catalyst to various components having action responsibility in the recommended chip development program.

S. The Technical Chip Papers. The Team has in process a series of technical papers which are to be produced with the support and assistance of the NPIC. The purpose of these papers is to set forth as best we can the state of knowledge in the technical fields related to chips. These papers should be completed and held for general reference in the CODIB Support Staff. To accomplish this [redacted] 25X1 NRTSC, would need to be designated CODIB Chip Technical Officer and be assigned responsibility for their completion. We estimate this to be a four-to-six months part-time task.

III. RECOMMENDATIONS

A. Operational Data Base Chip Standardization and Automation.

1. General - That a standard chip for this use area be adopted for all USIB agencies engaged in the aerospace reconnaissance business, and that it be of 70x100 mm external dimensions, with the proviso that a six-month testing and evaluation period be satisfactorily completed before implementation is begun;

2. Tactical/Operational Chip Applications - No standard chip or its automation be imposed at this time on the Tactical/Operational use area, leaving to the local commander the judgment as to:

a. what share of his data base can best be handled by the 70x100 mm chip, and

b. whether chipping (standard or not) is necessary, feasible or desirable.

3. Exceptions - That exceptions to this operational data base standard be permitted when justified on appropriate grounds, such as weight, volume or turn-around time constraints deriving from the operation being supported.

B. Analytic Exploitation Chip Standardization and Automation. That no standardization action in the exploitation chip use area be undertaken at this time, that NPIC be urged to document and press forward at top priority with its efforts aimed at developing a 4" x 5" or larger exploitation chip along with associated equipments and system concepts, with the proviso that ARC components be kept fully informed on progress being made.

C. Interim Actions to Extend and Develop Chip Standardization. That CODIB take such actions as it may deem appropriate to maintain the momentum necessary to achieve maximum initial chip standardization as rapidly and as orderly as feasible.

D. Systems Analysis. That a systems analysis be undertaken immediately to determine the nature and importance of the interface among the existing (and anticipated) components of the ARC as another essential first step in developing the basis for transitioning into a more closely integrated national aerial reconnaissance effort. A study is also required of the interface area(s) among the critical technical intelligence sources for the purpose of formulating an action program essential to achieving the highest degree of compatibility among the entire family of technical intelligence sources, with particular reference to aerial acquisition systems.

E. The CODIB Role. That the CODIB continue an active role in the unfolding chip development effort, and appoint a Chip Liaison Officer to monitor progress on the recommended actions and related developments.

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Sue -

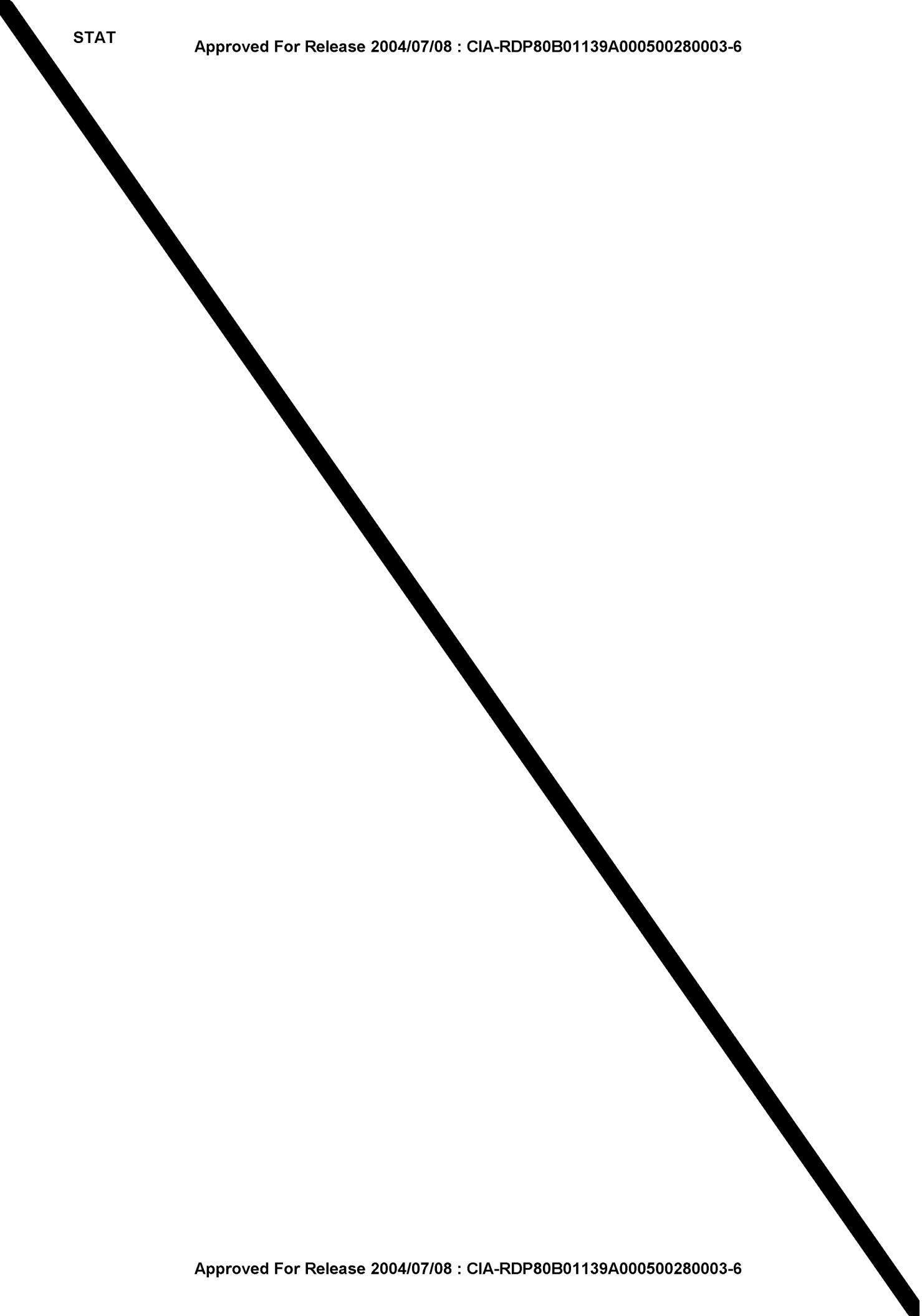
Anne checked out the time of this meeting with all but AT- and SMC. Will call in the data from [redacted] this pm - as soon as I hear. Then would you type

STAT

STAT up the draft - and show it to [redacted] I'll check it out in the morning & we can send it forthwith.

Thanks

Approved For Release 2004/07/08 : CIA-RDP80B01139A000500280003-6



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[redacted]

1. The [redacted] ~~Photo Chip report to~~ meeting of the COMTB Photo Chip Team will be held ~~on the~~ [redacted] ~~the~~ [redacted] April at NPIC, beginning at 0900. The purpose of the meeting is to make the final review of the Photo Chip report (complete arrangements) and to ~~plan~~ for ~~the~~ presenting the results of the Team's inquiry to COMTB prior to formal publication.

2. The ~~proposed~~ report format has been sharply revised and some recommendations have been added.

The report is now made up of (the following four parts,) old Parts 1, 2, and 8, plus a new complete listing of both basic (recommendations) and implementing recommendations. Old Parts 3, 4, 5, 6 and 7 will become annexes in that order. Documentation previously considered candidates for annexes will be placed in a permanent CODIB chip reference file. STAT will have the chip sample annex ready for Team review at this meeting.

3. Inquiries should be addressed to — (See phone) Quinit Lamberts new phone number and pick up rest of standard

closing para.